Abstract Submitted
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Divertor Heat Flux Control with 3D Stochastic Magnetic Fields during ELM Suppression.[1] DM ORLOV, RA MOYER, IO BYKOV, UCSD, TE EVANS, W WU, GA, A LOARTE, ITER, A TEKLU, Oregon State U, JG WATKINS, SNL, H WANG, BC LYONS, GL TREVISAN, ORAU, MA MAKOWSKI, C LASNIER, ME FENSTERMACHER, LLNL — Experiments in DIII-D have been performed to modify the divertor heat and particle flux pattern during suppression of ELMs with resonant magnetic perturbation (RMP) fields. In this work, we assessed the impact of small current modulations in a subset of DIII-D I-coils on pedestal profiles, transport and stability as well as divertor conditions. Different I-coil subset ramps were performed allowing for a slow transition of the divertor footprints from n=3 to n=2 and n=1 distributions. We obtained long periods of RMP ELM suppression with slow I-coil quartet ramps. Strong divertor particle flux splitting was observed in these discharges as well as modulation of the divertor heat flux due to changes in toroidal spectrum of applied perturbation. Experimental results are compared to the TRIP3D modeling and to linear M3D-C1 simulations to understand the role of the plasma response on quantitative predictions of the divertor flux splitting.

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